

SEQUENCE LISTING

SEQ ID NO: 1

Sequence Length: 1013

Sequence Type: Nucleic acid

Stranded nos: Single

Topology: Linear

Molecular Type: cDNA

GAATTCCGGCA CGAGGGATCT GG ATG GCA TCT ACT TCG TAT GAC TAT TGC AGA	49
Met Ala Ser Thr Ser Tyr Asp Tyr Cys Arg	10
GTG CCC ATG GAA GAC GGG GAT AAG CGC TGT AAG CTT CTG CTG GGG ATA	97
Val Pro Met Glu Asp Gly Asp Lys Arg Cys Lys Leu Leu Leu Gly Ile	15
15 20 25	
GGA ATT CTG GTG CTC CTG ATC ATC GTG ATT CTG GGG GTG CCC TTG ATT	145
Gly Ile Leu Val Leu Leu Ile Ile Val Ile Leu Gly Val Pro Leu Ile	30
30 35 40	
ATC TTC ACC ATC AAG GCC AAC AGC GAG GCC TGC CCG GAC GGC CTT CGG	193
Ile Phe Thr Ile Lys Ala Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg	45
45 50 55	
GCA GTG ATG GAG TGT CGC AAT GTC ACC CAT CTC CTG CAA CAA GAG CTG	241
Ala Val Met Glu Cys Arg Asn Val Thr His Leu Leu Gln Gln Glu Leu	60
60 65 70	
ACC GAG GCC CAG AAG GGC TTT CAG GAT GTG GAG GCC CAG GCC ACC	289
Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu Ala Gln Ala Ala Thr	75
75 80 85 90	
TGC AAC CAC ACT GTG ATG GCC CTA ATG GCT TCC CTG GAT GCA GAG AAG	337
Cys Asn His Thr Val Met Ala Leu Met Ala Ser Leu Asp Ala Glu Lys	95
95 100 105	
GCC CAA GGA CAA AAG AAA GTG GAG GAG CTT GAG GGA GAG ATC ACT ACA	385
Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu Gly Glu Ile Thr Thr	110
110 115 120	
TTA AAC CAT AAG CTT CAG GAC GCG TCT GCA GAG GTG GAG CGA CTG AGA	433
Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu Val Glu Arg Leu Arg	125
125 130 135	
AGA GAA AAC CAG GTC TTA AGC GTG AGA ATC GCG GAC AAG AAC TAC TAC	481
Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr	140
140 145 150	
CCC AGC TCC CAG GAC TCC AGC TCC GCT GCC GCG CCC CAG CTG CTG ATT	529
Pro Ser Ser Gln Asp Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile	155
155 160 165 170	
GTG CTG CTG GGC CTC AGC GCT CTG CTG CAG TGA GATCCCCAGGA AGCTGGCAC	582
Val Leu Leu Gly Leu Ser Ala Leu Leu Gln ***	175 180 185
TCTTGGAAAGG TCCCTCTTGC TCGGCTTTTC GCTTGAACAT TCCCTTGATC TCATCAGTT	642
TGAGGGGGTC ATGGGGCAAC ACGGTTAGCG GGGAGAGCAC GGGGTAGCCG GAGAAGGGCC	702
TCTGGGACAG GTCCTGGAGG GCCATGGGGC AGTCCTGGGT GTGGGACAC AGTCGGGTIG	762
ACCCAGGGCT GTCTCCCTCC AGAACCTCCC TCCGGACAAT GAGTCCCCCCC TCTTGCTCC	822
CACCTTGAGA TTGGGATCG GGTGCGGTG GGCGGCCATG TGCTGCTGT TGTATGGGT	882
TTTTTTGCG GGGGGGGTTG CTTTTTCTG GGGTCTTGA GCTCCAAAAA AATAAACACT	942
TCCTTGGAGG GAGAGCACCA CACCTTAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAATTC	1002
GGCGCGCCGC C	1013

SEQ ID NO: 2

Sequence Length: 379

Sequence Type: Nucleic acid

Topology: Linear

Molecular Type: cDNA

Sequence

ATG GGA TGG AGC TGT ATC ATC CTC TCC TTG GTA GCA ACA GCT ACA GGT	48
Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly	
-15 -10 -5	
GTC CAC TCC GAC ATC CAG ATG ACC CAG AGC CCA AGC AGC CTG AGC GCC	96
Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala	
-1 1 5 10	
AGC GTG GGT GAC AGA GTG ACC ATC ACC TGT AAG GCT AGT CAG GAT GTG	144
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val	
15 20 25	
AAT ACT GCT GTA GCC TGG TAC CAG CAG AAG CCA GGA AAG GCT CCA AAG	192
Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys	
30 35 40 45	
CTG CTG ATC TAC TCG GCA TCC AAC CGG TAC ACT GGT GTG CCA AGC AGA	240
Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg	
50 55 60	
TTC AGC GGT AGC GGT ACC GAC TTC ACC TTC ACC ATC AGC AGC	288
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser	
65 70 75	
CTC CAG CCA GAG GAC ATC GCT ACC TAC TAC TGC CAG CAA CAT TAT AGT	336
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser	
80 85 90	
ACT CCA TTC ACG TTC GGC CAA GGG ACC AAG GTG GAA ATC AAA C	379
Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys	
95 100 105	

SEQ ID NO: 3

Sequence Length: 418

Sequence Type: Nucleic acid

Topology: Linear

Molecular Type: cDNA

Sequence

ATG GAC TGG ACC TGG AGG GTC TTC TTG CTG GCT GTA GCT CCA GGT	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
GCT CAC TCC CAG GTG CAG CTG GTG CAG TCT GGG GCT GAG GTG AAG AAG	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
CCT GGG GCC TCA GTG AAG GTT TCC TGC AAG GCA TCT GGA TAC ACC TTC	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	

ACT CCC TAC TGG ATG CAG TGG GTG CGA CAG GCC CCT GGA CAA GGG CTT	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
GAG TGG ATG GGA TCT ATT TTT CCT GGA GAT GGT GAT ACT AGG TAC ACT	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
CAG AAG TTC AAG GGC AGA GTC ACC ATG ACC GCA GAC AAG TCC ACG AGC	288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser	
65 70 75	
ACA GCC TAC ATG GAG CTG AGC AGC CTG AGA TCT GAG GAC ACG GCC GTG	336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
TAT TAC TGT GCG AGA GGA TTA CGA CGA GGG GGG TAC TAC TTT GAC TAC	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
TGG GGG CAA GGG ACC ACG GTC ACC GTC TCC TCA G	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	

SEQ ID NO: 4

Sequence Length: 418

Sequence Type: Nucleic acid

Topology: Linear

Molecular Type: cDNA

Sequence

ATG GAC TGG ACC TGG AGG GTC TTC TTG CTG GCT GTA GCT CCA GGT	48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly	
-15 -10 -5	
GCT CAC TCC CAG GTG CAG CTG CTG CAG TCT GGG GCT GAG GTG AAC AAG	96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys	
-1 1 5 10	
CCT GGG GCC TCA GTG AAG GTT TCC TGC AAG GCA TCT GGA TAC ACC TTC	144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe	
15 20 25	
ACT CCC TAC TGG ATG CAG TGG CTG CGA CAG GCC CCT GGA CAA GGG CTT	192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu	
30 35 40 45	
GAG TGG ATG GGA TCT ATT TTT CCT GGA GAT GGT GAT ACT AGG TAC ACT	240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser	
50 55 60	
CAG AAG TTC AAG GGC AGA GTC ACC ATC ACC GCA GAC AAG TCC ACG AGC	288
Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser	
65 70 75	
ACA GCC TAC ATG GAG CTG AGC AGC CTG AGA TCT GAG GAC ACG GCC GTG	336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val	
80 85 90	
TAT TAC TGT GCG AGA GGA TTA CGA CGA GGG GGG TAC TAC TTT GAC TAC	384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr	
95 100 105	
TGG GGG CAA GGG ACC ACG GTC ACC GTC TCC TCA G	418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
110 115 120	